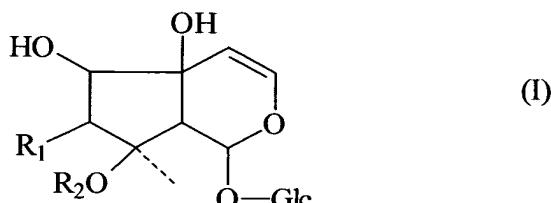


WHAT IS CLAIMED IS:

Subh A1

1. Use of a compound represented by the following formula (I) as an agent for prevention and treatment of arthritis, osteoporosis and ruptured disc:

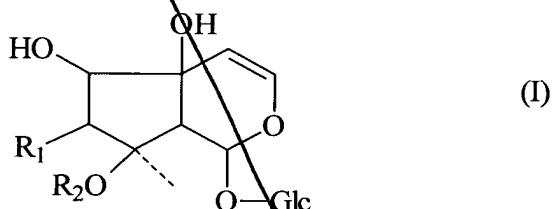


in which

R₁ represents hydrogen atom or alkyl group; and

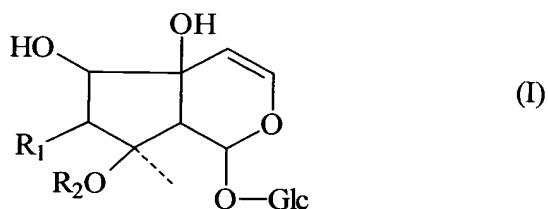
R₂ represents hydrogen atom or cinnamoyl group.

10 2. A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):



in which R₁ represents hydrogen atom or alkyl group and R₂ represents hydrogen atom or cinnamoyl group, in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

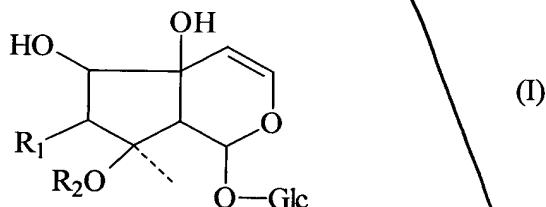
3. A pharmaceutical preparation containing as an effective component a compound represented by the following formula (I):



in which R₁ represents hydrogen atom or alkyl group and R₂ represents hydrogen atom

or cinnamoyl group, and one more materials selected from the group consisting of allendrate, tamoxifen, vitamin D₃, parathyroid hormone (PTH), sulfasalazine, thioredoxin reductase, alendronate, raloxifene, calcitonin, estradiol, genistein, 1,25-dihydroxyvitamin D₃, estrogen receptor modulator, biphosphonates, shinbarometin (novel material developed by the present inventors) and shinbarometin acetate (novel material developed by the present inventors), in combination with a pharmaceutically acceptable auxiliary, diluent, isotonic agent, preservative, lubricant and solubilizing aid, which is formulated in the form of a pharmaceutically acceptable preparation and has a potent effect for osteoporosis, arthritis and ruptured disc.

15 4. A process for preparing a compound of formula (I) wherein R₂ is hydrogen atom, which has a more potent pharmacological activity, characterized in that a compound of formula (I) wherein R₂ is cinnamoyl is hydrolyzed:



in which R_1 represents hydrogen atom or alkyl group and R_2 represents hydrogen atom or cinnamoyl group.